

# LAKE BALLINGER REGIONAL STORMWATER FACILITY FEASIBILITY STUDY

City of Edmonds, September 8, 2020



TETRA TECH

**GROUNDSWELL**

LANDSCAPE ARCHITECTURE | URBAN DESIGN | PLANNING





**Site Context**

**Lake Ballinger Regional Facility - City of Edmonds**

Not to Scale | 9 April 2020





# What is storm water?

- Natural precipitation
  - Rain events
  - Snow melt
  - Other surface runoff and drainage
- Travels over land and discharges into surface water.



# Why is storm water a problem?

- Problem: Decrease in quality
- Problem: Increase in quantity
- Cause: Developed and disturbed land

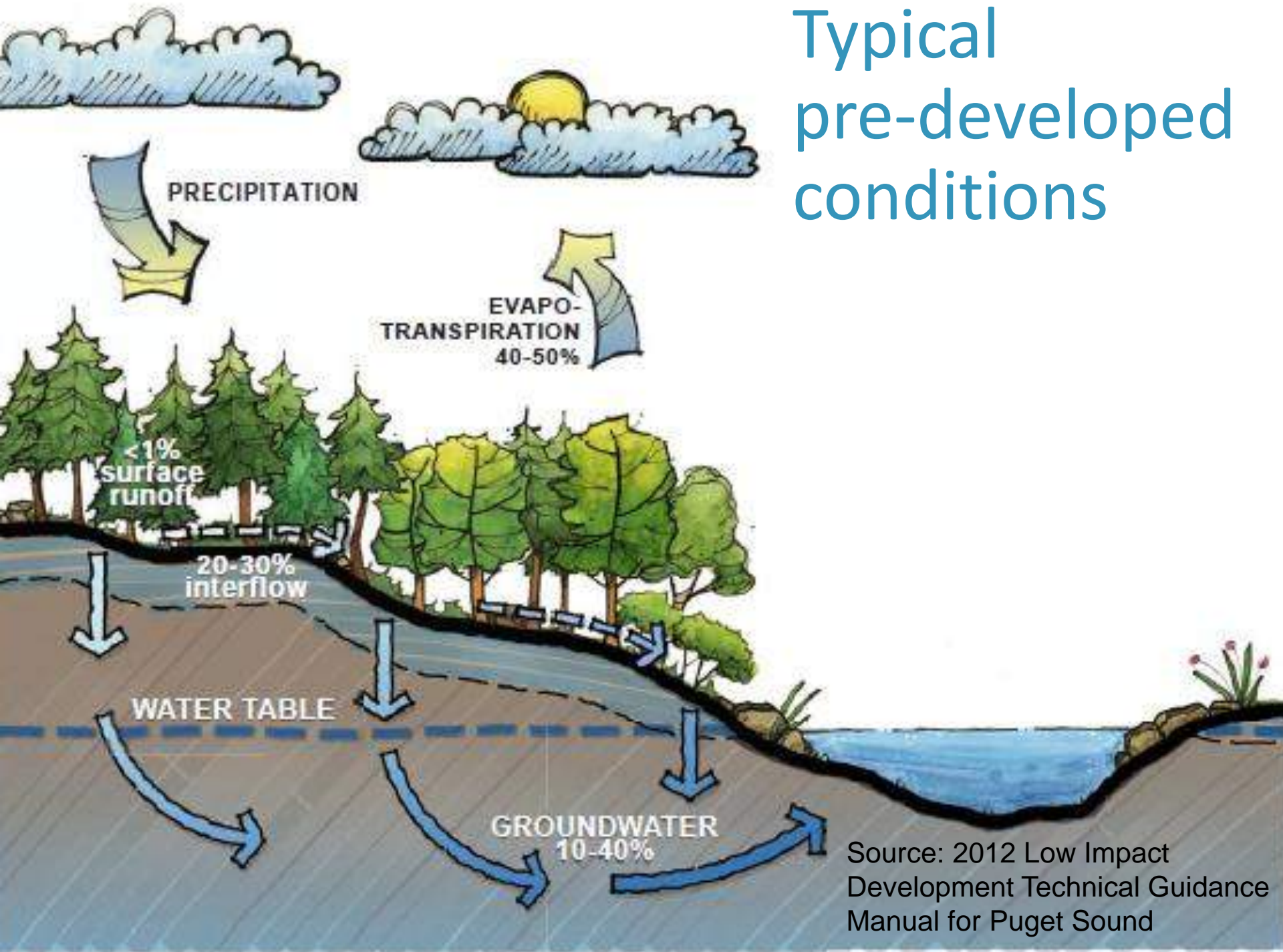






Pollutants in  
stormwater discharges

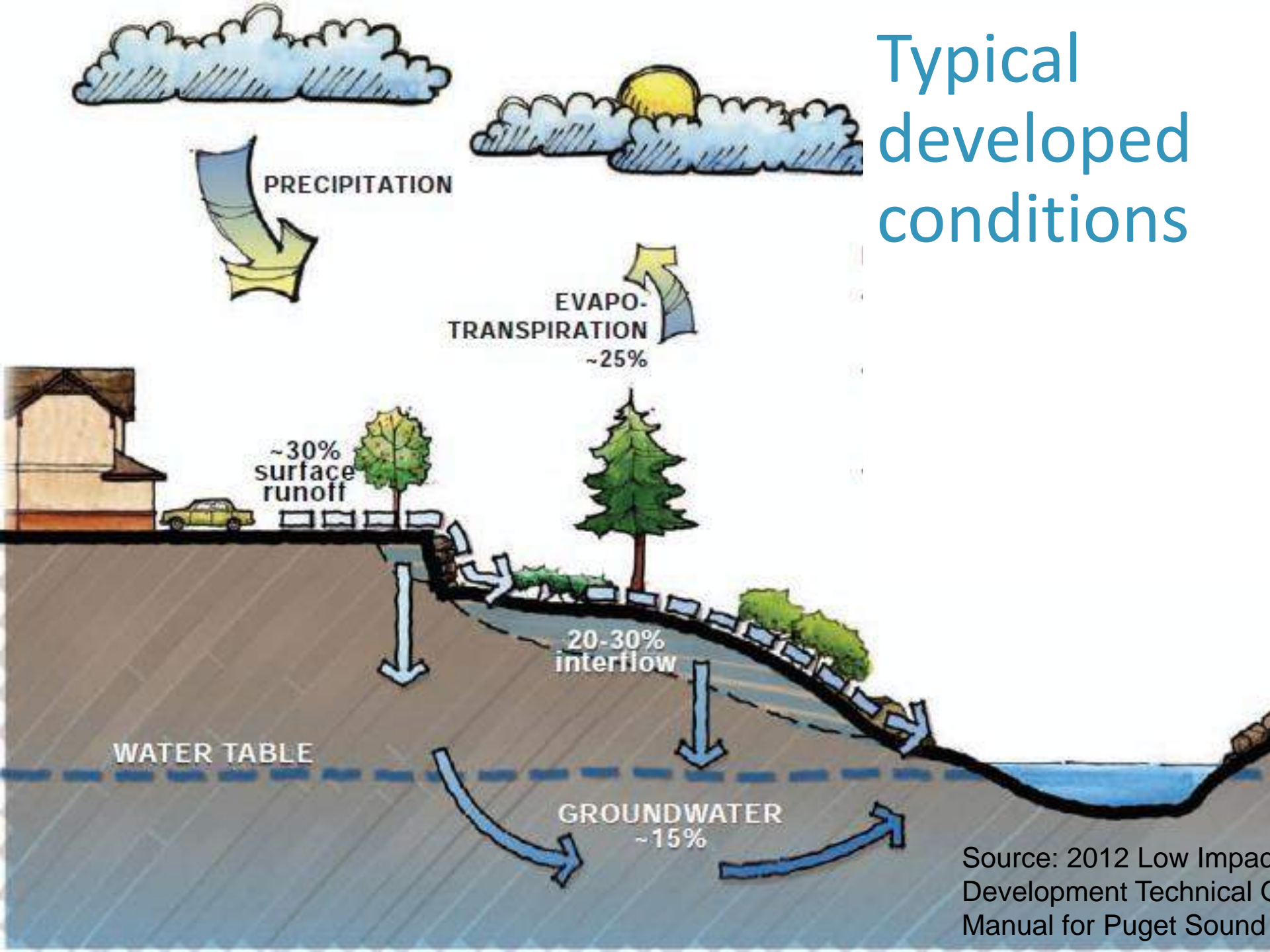
# Typical pre-developed conditions



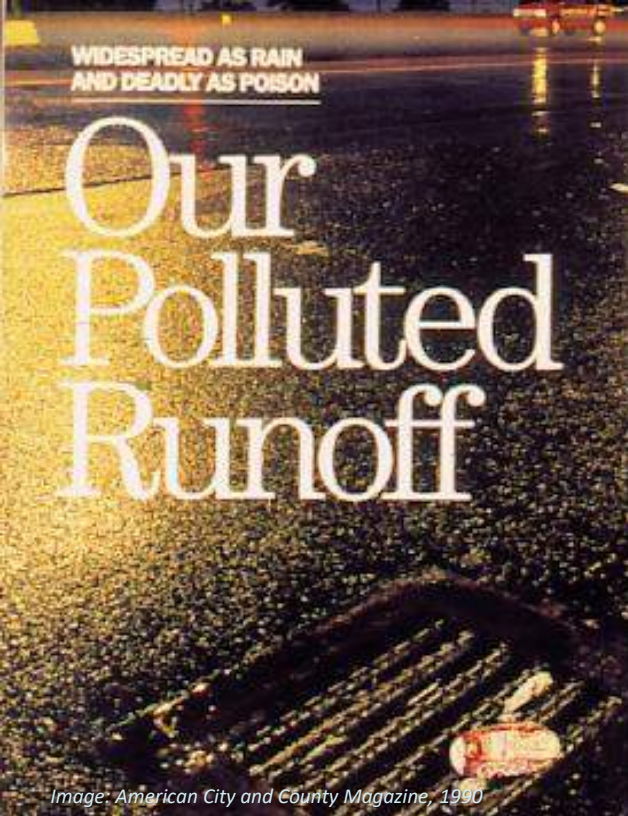
Source: 2012 Low Impact  
Development Technical Guidance  
Manual for Puget Sound



# Typical developed conditions



Source: 2012 Low Impact Development Technical C Manual for Puget Sound



# Runoff Treatment



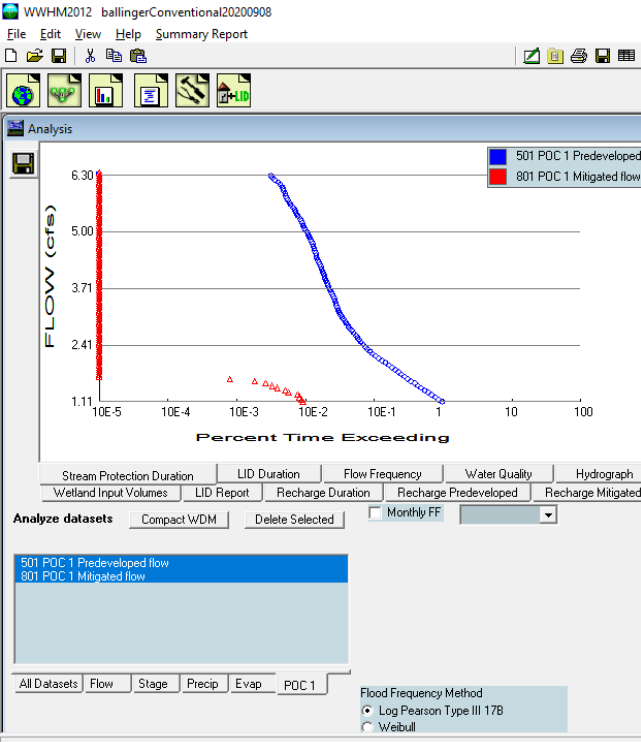


Image: American City and County Magazine, 1990



# Flow Control



# What are the benefits of green stormwater infrastructure?

- Improve aesthetics
- Protect riparian areas
- Increase property values
- Educate the community
- Reduce infrastructure and maintenance costs





# Triple bottom line indicators

## Environmental

- Reduced Flooding
- Enhanced Water Quality
- Enhanced Habitat
- Enhanced Plantlife
- Enhanced Wildlife
- Lower Temperatures
- Enhance Air Quality

## Economic

- Workforce Development
- Business Development

## Social

- Social Cohesion
- Public Safety
- Reduced Crime

## Health

- Increased in Exercise
- Decreases in Heat-related Illness
- Reduced Stress
- Improved Quality of Life and Aesthetics

ENVIRONMENT



SOCIAL



HEALTH



ECONOMIC



# Benefits of parks and green stormwater



## Health and Wellness

Improved health and wellness through parks and recreation



## Conservation

Protecting open space, connecting children to nature, and engaging communities in conservation practices



## Social Equity

Ensuring all people have access to the benefits of local parks and recreation

# Parks, green stormwater infrastructure, and equity





# Beautify parks and neighborhoods



- Increase amount and variety of vegetation
- Introduce alternative materials and orientation for roads and sidewalks
- Improve pedestrian experience
- Encourage exercise
- Enhance the character of the community



# Enhance park aesthetics

- Opportunity to create a green stormwater infrastructure network that can serve as enjoyable open space
- Provides community gathering places to build social cohesion
- Being “green” can be a positive selling point
- Reduces crime







**Basin Diagram**



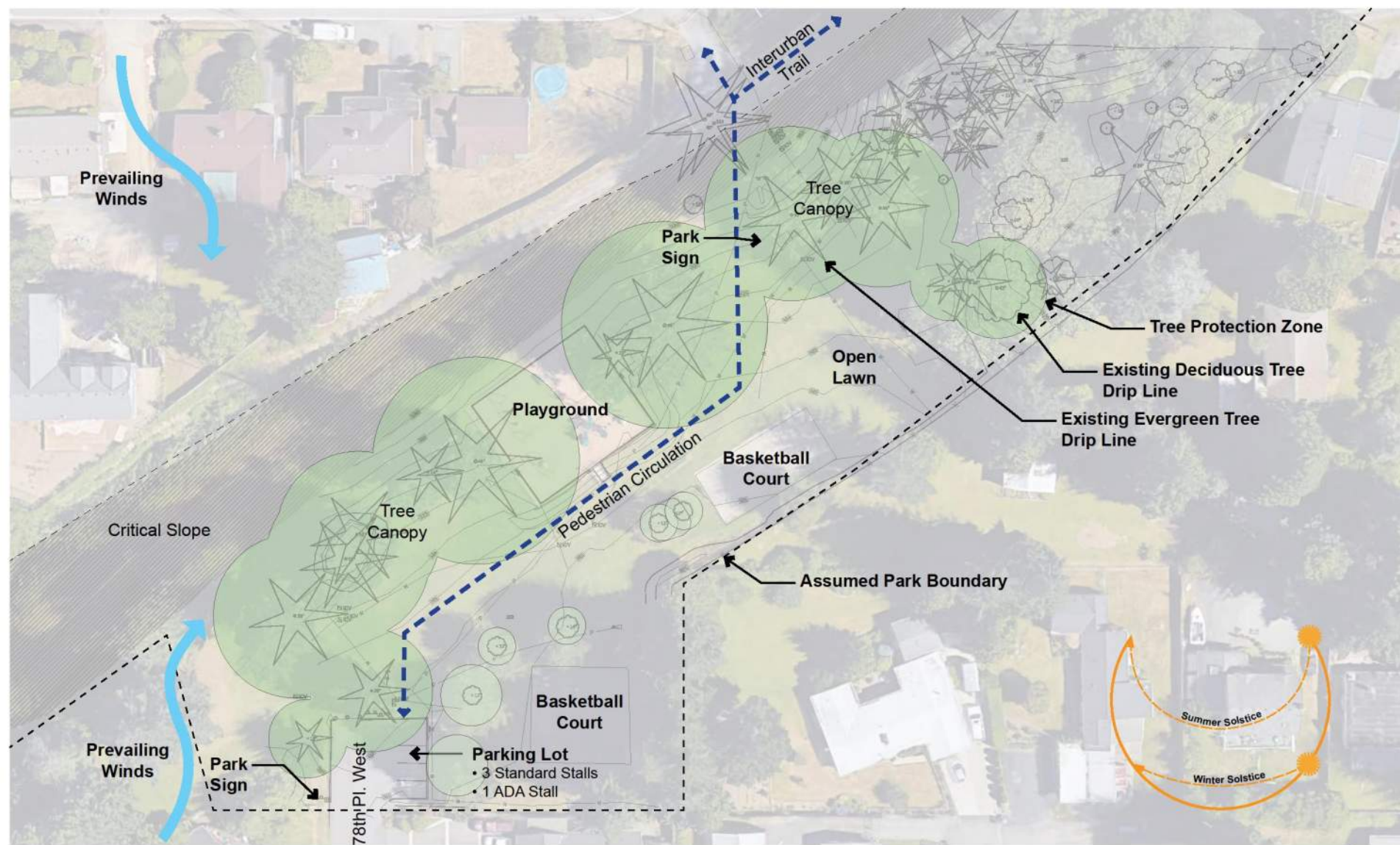


Site Aerial - Mathay Ballinger Park

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020





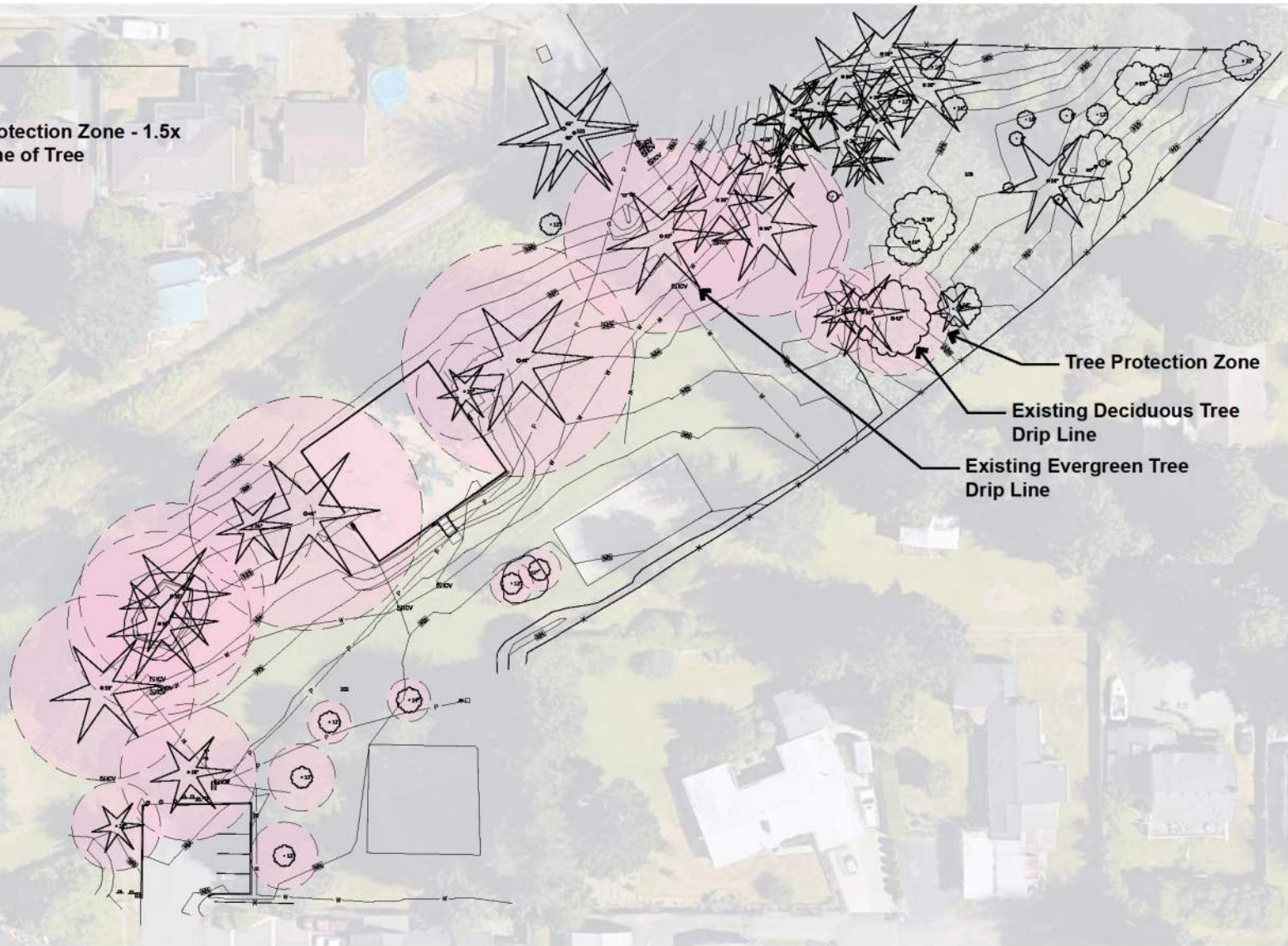
## Site Analysis



## Legend



Tree Protection Zone - 1.5x  
Drip Line of Tree



## Tree Protection Areas

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020



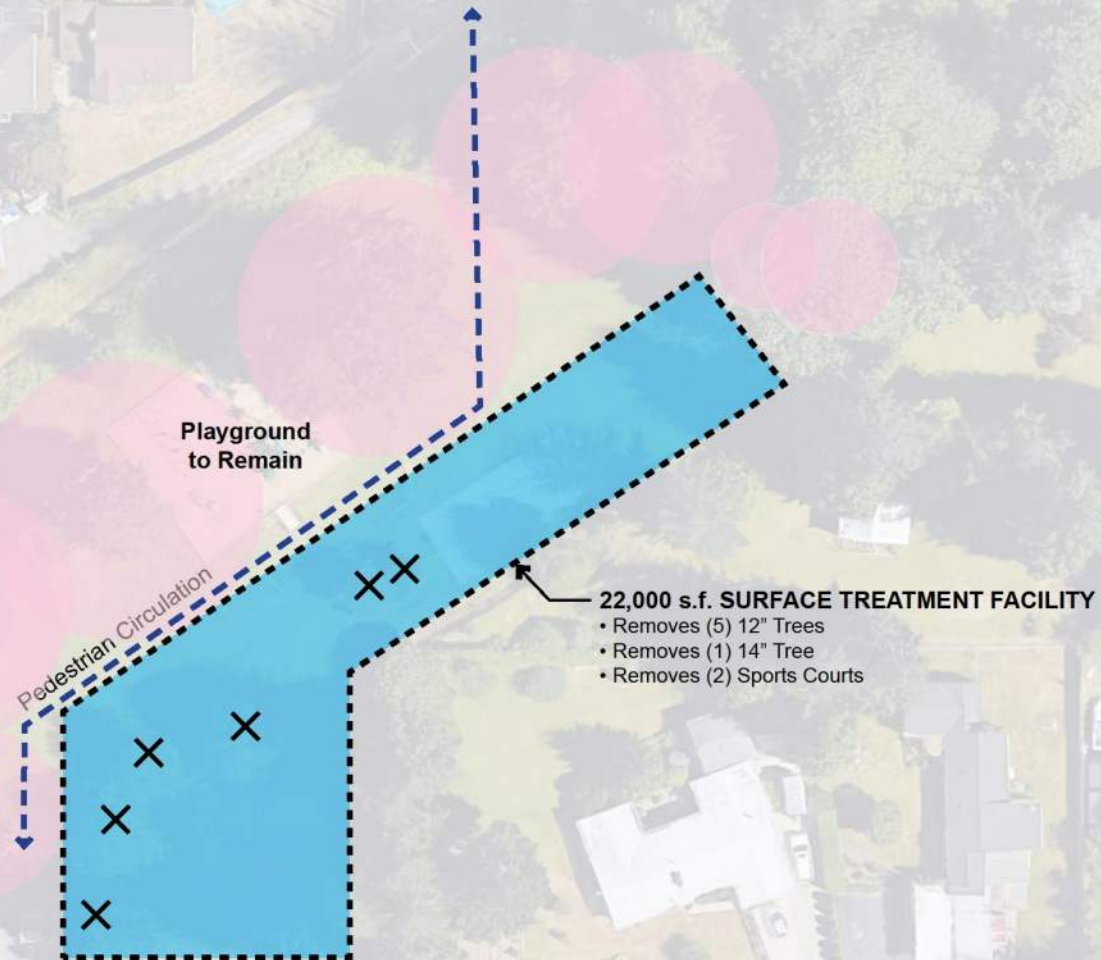
## Legend



Tree Protection Zone - 1.5x  
Drip Line of Tree



Tree to be Removed



## OPTION A - 22,000 s.f. Surface Treatment Facility

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020

## Legend



Tree Protection Zone - 1.5x  
Drip Line of Tree



Tree to be Removed

Pedestrian Circulation

Playground  
to Remain

### 9,500 s.f. SURFACE TREATMENT FACILITY

- Removes (2) 12" Trees
- Removes (1) Sports Court

## OPTION B - 9,500 s.f. Surface Treatment Facility

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020





**Site Visit with City Staff - January 2020**

**Lake Ballinger Regional Facility - City of Edmonds**

Scale: 1"=20' | 14 April 2020





# Arborist Walk - June 2020

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020



## Appendix A Photographs



Photo 1: Looking northeast at part of the grove of native trees located in the northern portion of the site.



Photo 2: Some of the Douglas-fir trees along the northwestern boundary of the park were previously topped. This has resulted in co-dominant tops (circled in red) which are less stable than if the original top was still intact.



Photo 3: Looking southwest along a social trail that runs through the native tree grove.



Photo 4: Trees A (left) and B (right) grow in a vegetation island west of the basketball court (visible at left).

## Arborist Memorandum - July 2020

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020



## Park Use + Tree Diagram

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020



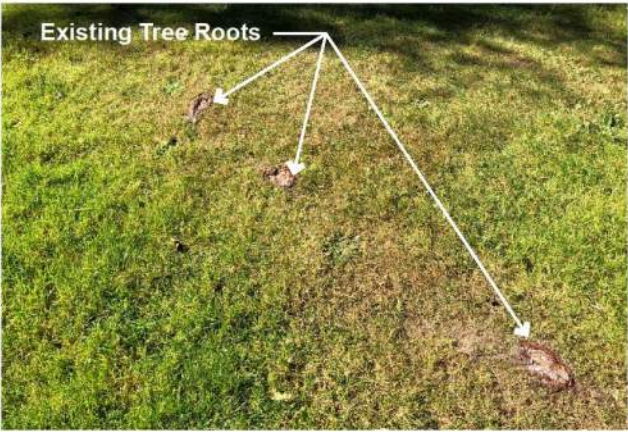
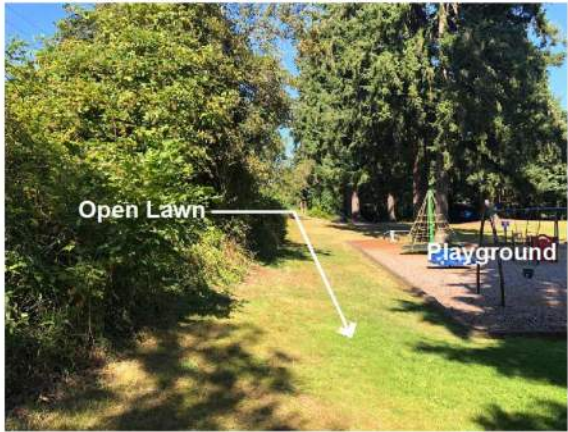
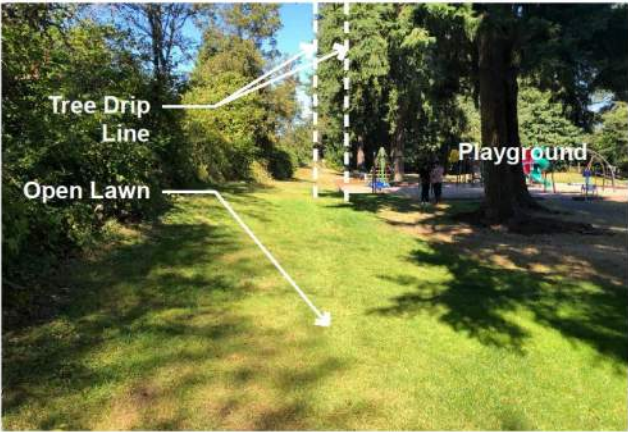


**Preferred Alternative**

**Lake Ballinger Regional Facility - City of Edmonds**

Scale: 1"=20' | 14 April 2020



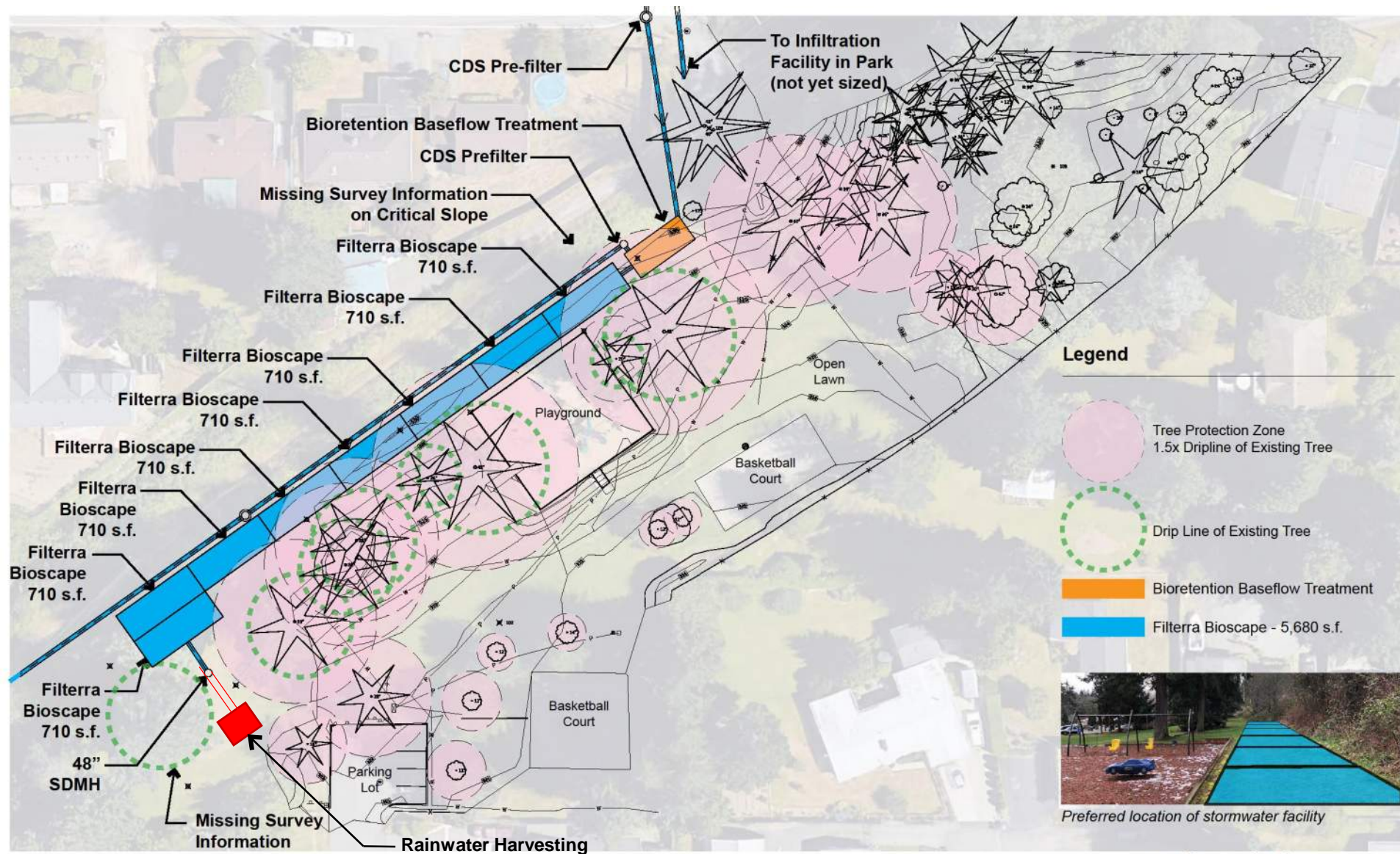


# Preferred Alternative - Site Photos

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 14 April 2020





## Preferred Alternative

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 13 August 2020





## Preferred Alternative - Before

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 13 August 2020





## Preferred Alternative - After

Lake Ballinger Regional Facility - City of Edmonds

Scale: 1"=20' | 13 August 2020





# Stormwater Facility Design - Precedent Images

Lake Ballinger Regional Facility - City of Edmonds

1 September 2020





Environmental Education - Precedent Images



# Interurban Trail



Interurban Train



Rails incorporated into stormwater facility



Rails incorporated into stormwater facility



Rails incorporated into stormwater facility

# Great Western Lumber



Great Western Lumber Co. - Lake Ballinger



Board formed concrete stormwater facility



Board formed concrete site features



Salvaged wood seating at stormwater facility

# Shingle Mills



Shingle Mills on the Edmonds Waterfront



'Shingles' in the landscape



'Shingles' in the landscape



'Shingles' in the landscape

# Historical Narratives - Design Inspiration

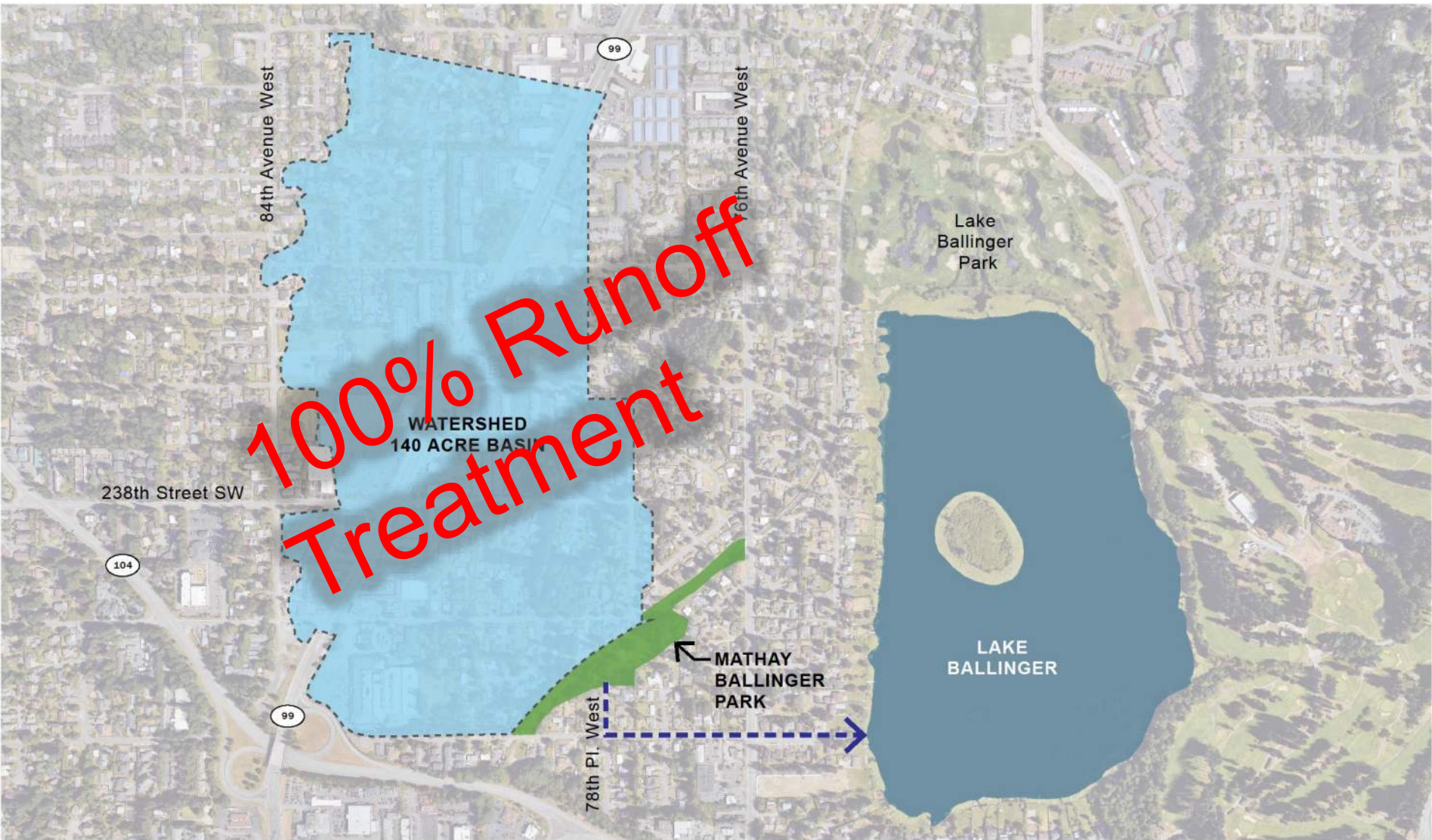




Rainwater harvesting



100% Runoff  
Treatment



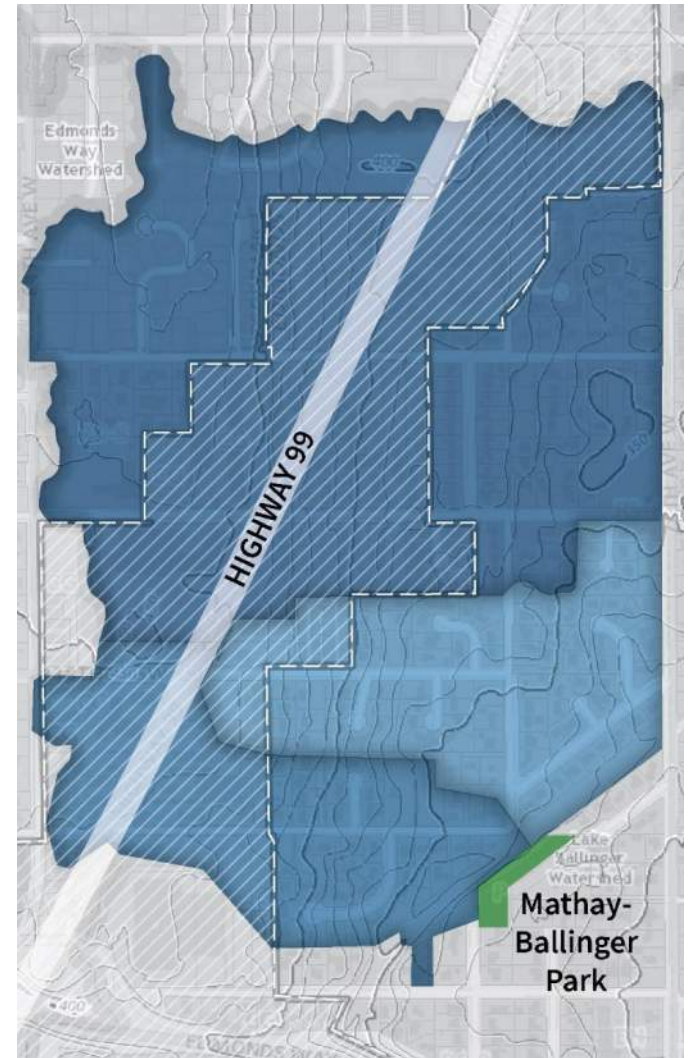
## Site Context

Lake Ballinger Regional Facility - City of Edmonds

Not to Scale | 9 April 2020



# Flow Control for the Highway 99 Redevelopment Corridor





# Preliminary Cost Range

---

- This is a Preliminary Cost Range based on current information.
- Complete Stormwater Facility (assuming Ecology grant)
  - Edmonds Portion:  
\$750,000 – \$1,250,000
  - Ecology Grant:  
\$2,250,000 - \$3,750,000
  - Total Cost:  
\$3,000,000 to \$5,000,000





# Savings, Efficiencies and Revenues

---



Cost Savings

Highway 99 Road Work  
Park Irrigation



Cost Efficiencies

Typical: \$300,000 - \$800,000/acre  
Project: \$30,000 - \$50,000/acre

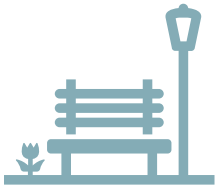


Potential Sources of  
Revenue Include:

Fee in Lieu Highway 99  
Redevelopment.



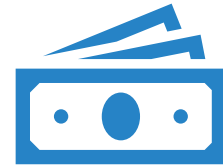
# Next Steps



Share the progress/design  
concept with local  
neighborhood



Complete the analysis and  
preliminary optimization



Apply for grant funding



An aerial photograph of a suburban neighborhood, featuring a mix of residential houses, green trees, and a large body of water on the right side. A small, tree-covered island is visible in the lake. The image is semi-transparent, allowing the text and logos to be overlaid clearly.

# THANK YOU!



TETRA TECH

**GROUNDSWELL**

LANDSCAPE ARCHITECTURE | URBAN DESIGN | PLANNING